Catalina Cylinders

GENEDGE ALLIANCE

Catalina Cylinders Improves Processes with Lean Manufacturing Technology

Client Profile:
The Cliff Impact Division of Catalina Cylinders, located in Hampton, Virginia is a leading producer of high and low pressure aluminum compressed gas cylinders. Catalina Cylinders also has ties to a west coast facility known as Aluminum Precision Products (APP). In 1992 APP purchased Catalina Cylinders, which gave them the ability to supply their global distributors with fast, attentive service and unparalleled quality products. Their product lines consist of high-pressure aluminum cylinders for beverage, scuba, medical, industrial gas, life support, paintball, and fire extinguisher applications. Low pressure cylinders for various applications as well as technical impact forgings are also supplied to the marketplace. The company employs 100 people.

Situation:
Catalina Cylinders has been implementing Lean concepts in their West Coast facility with great success. Based on those positive results, Catalina Cylinders in Hampton approached Virginia Applied Technology and Professional Development Center (VATPDC) and GENEDGE ALLIANCE, formerly Virginia's A.L. Philpott Manufacturing Extension Partnership (VPMEP), a service delivery partner and NIST MEP network affiliate, to facilitate a series of rapid improvement (Kaizen) events / Lean implementations in their Virginia facility. This effort focused on the medical cylinder product line and would encompass the entire manufacturing process from the raw material saw operation through to the final assembly and pack operations. The impetus for this rapid improvement effort was an increase in actual customer demand, which was exceeding their ability to supply products to meet the new demand rate.

Solution:
Together VATPDC and GENEDGE ALLIANCE outlined a strategy to support the rapid improvement criteria as set forth by the Catalina Cylinder's management team. This strategy included training in the following areas: Lean Principles, Value Stream Mapping (VSM), and 5S (Sort, Set in Order, Shine, Standardize, Sustain) techniques. An implementation team and Lean Champion were identified from within their organization. This team, along with other members of the Catalina Cylinder's organization, was exposed to the aforementioned training. Next a VSM was completed by the implementation team for the entire product value stream. Based on this 'overall' VSM, more detailed maps were created for each of the sub-streams. Subsequently, a gap analysis was completed for each discrete process step. This analysis technique yielded an action item list of 'Things to Do' that would serve as a template to fashion and focus process improvement efforts. The magnitude of the change being considered dictated that the rapid improvement events take place over a period of four (5 day) events spanning a total time frame of approximately two months. Each event to be focused on one segment of the VSM working from the end of the process (final assembly & pack) 'upstream' to the lead off processes. Upon completion of the first Kaizen event (focused on the final assembly and pack operations), it was very evident of the potential magnitude of improvement possible with the incorporation of Lean

principles into this environment. The remaining three areas were subsequently completed as quickly as possible. These Lean implementation efforts focused on incorporation of Lean tools like: Kanban, visual sequencing of work, visual demand boards, visual attainment displays, Point of use storage (POUS) techniques, operational standard work, operator cross-training, visual raw material replenishment techniques, production paced to actual customer demand, re-distribution of work within cells, visual shop floor indicators, 5S activities, and streamlining work release procedures. Once incorporated, these changes allowed this facility not only to be able to meet the new demand goals, but to easily exceed them. In fact, an existing backlog of orders for this product line was rapidly eliminated. Quality improved not only for the end product, but first-pass-yield improve for the producing processes, product through-put velocity increased greatly, overall inventory was reduced, communications between operational shifts and related functional departments improved, order status and priority management was communicated visually, material/parts were organized and visually managed, and operator fatigue was reduced via the cross-training efforts. The overall target of increasing capacity to meet new incremental sales goals was realized, with some capacity to spare!

Results:
Estimated:
* Sales increase of $8 million.
* Cost savings of $220,000.
* Investments of over $110,000.

Testimonial:

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